**ANT-XXIX/3 - Weekly Report No. 7**
**March 4 - 10, 2013**
**"A picture is worth a thousand words"**

Last week, including the weekend, started with benthos work in the Bransfield Strait, on the shelf of the Antarctic Peninsula. We ‘dug ourselves in’ to have a close look at the benthos communities in this area. As opposed to work in temperate areas, the short time window for sampling in Antarctic waters often only allow for sporadic sampling of the fauna. With our narrowly spaced grid of stations, we now have the samples needed to characterize the entire area and to derive more general statements. This is of particular value as the underwater topography in this area shows shallow banks, canyons and steep continental slopes. As mentioned in previous weekly reports, the mapping of the seabed is helpful for the selection of sampling sites. Based on detailed bathymetric maps, we can select areas suitable for our investigations and objectives. In addition, the maps also help us to avoid deploying sampling gear over rocks and hard ground. The topography work of Boris and Daniel will provide valuable information for interpreting the biological data sets back on land.

Image 1: The slopes of the newly discovered shallow bank in the Weddell Sea show a patchy distribution of various benthic organisms. ©AWI/IPÖ.

The Ocean Floor Observation System (OFOS) has been mentioned several times in relation to work at the seabed. It is a state-of-the-art device, which we used to call the ‘photo-sled’. OFOS records high-resolution images at regular intervals of the seafloor and its inhabitants. When OFOS is deployed, the winch operator has to continuously heave up and down to make sure that it is more-or-less at the same distance to the seafloor. If the swell is too large to be compensated by the winch operator, then photos have to be taken manually to keep the images in focus and well illuminated. An altimeter mounted on the device provides the height above the seafloor. Whenever the device is at the right distance from the bottom; Alexandra presses the trigger and takes a picture. By now, we have recorded thousands of images telling us a lot about life at the seafloor. The shelf of the Antarctic Peninsula is characterized by mixed benthos communities. For example, glass sponges occur here, which we also found in the high Antarctic of the southern Weddell Sea. However, in this region, they apparently only form small "islands" attracting numerous other animals including other sponges. Whenever OFOS is in the water, we have often ‘visitors’ in the winch control room. This is because the images send up from the seabed are fascinating for every biologist. In combination with the bathymetric data, they also provide information on what to expect from the trawls, if it is possible to deploy sediment-sampling equipment and if the Agassiz-trawl could run the risk of being damaged by large rocks on the seafloor. A very preliminary first impression we get from our work is that, in the Bransfield Strait, the benthic fauna is richer than in the Drake Passage. This has caused some disappointed looks on the faces of the benthologists during the last week. Once in a while though, there are some highlights: e.g. violet octocorals, rays and sea-pens in a way we have never seen them before. Andrea and Chiara, whose interests are the small-scale community structures of different species, can investigate how these animals co-exist in their natural habitat. We also see eel-pouts in front of the camera. On the shelf, this fish is a good indicator for warmer water as they do not occur in the cold (-1.8°C) water from the Weddell Sea. We

Image 2: In the Bransfield Strait, scattered sponges obviously attract other benthic organism thus creating small ‘islands’ of high bio-diversity. ©AWI/IPÖ.

Image 3: In the Drake Passage, the benthos is less obvious than in the Bransfield Strait. We want to investigate the reason for this difference.

are also quite surprised that our experience-derived hypotheses, on which fauna should be where, are often incorrect. This raises our excitement over every new OFOS deployment and Agassiz trawl, independent of whether the hauls contain rich or poor fauna.

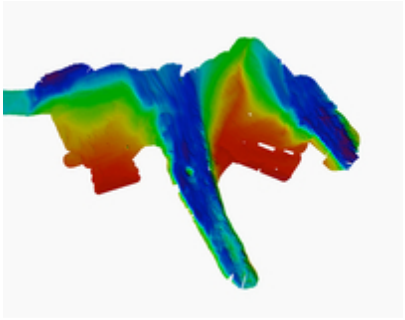

Image 4: The bathymetry provides nice, colorful pictures that also contain valuable information for us. ©AWI Bathymetry Group.

At the moment, the weather is nice, the sea is calm and the sun is shining, hence the working conditions here are rather good. This is surprising given that the Drake Passage is notorious for its storms. This means the whale observers are able to resume their helicopter surveys. So far, the surveys have shown that to the west of the Antarctic Peninsula, the variety of whales is higher than in the Weddell Sea. From a scientific point of view, the observations from the Weddell Sea are, however, of specific value as they allow for estimations on the occurrence of Southern minke whale in relation to sea ice cover.

The weather forecasts by Manfred and Hartmut have been accurate and so we expect their predictions of good weather for the next few days to hold true. It therefore looks like we might be able to finish our tough final run over the next couple of days and collect all the samples we anticipated. This will allow us to include an extensive data set from the Drake Passage in our studies.
We will keep our fingers crossed!!!

We are all happy and healthy here on board and send our greetings to our relatives and friends.
Julian Gutt